

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Junya SHIMIZU et al.

Serial No: 09/879,529

Filed: June 12, 2001

For: IMAGE TRANSFORM METHOD FOR OBTAINING  
EXPANDED IMAGE DATA, IMAGE PROCESSING  
APPARATUS AND IMAGE DISPLAY DEVICE  
THEREFOR

Examiner: ROSARIO, Dennis

Art Unit: 2624

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed concurrently with a Notice of Appeal and before filing of an Appeal Brief.

The review is requested for the reasons stated on the attached sheets totaling five (5) or fewer pages.

Respectfully submitted,

Dated: November 26, 2007

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**REASONS FOR REQUEST FOR REVIEW**

Claim 1

Claim 1 recites, in part, "reducing correlation in the vertical and horizontal directions of an image that is linearly expanded in the vertical and horizontal directions to generate first image data . . . ." Thus, claim 1 requires that an image is linearly expanded in both the vertical and the horizontal directions.

The Examiner alleges that an "interpolation process" disclosed at col. 1, ln. 47-48 of Clatanoff teaches "an image that is linearly expanded" as required by claim 1. FOA, pg. 17. The language cited by the Examiner is found in the sentence, "These visual artifacts are due to an interpolation process that does not take into consideration the actual edge content of the data." Clatanoff, col. 1, ln. 47-49. However, the Applicants respectfully submit that this passage of Clatanoff fails to teach or suggest that the interpolation process is performed in both the vertical and horizontal directions.

Clatanoff teaches that missing data from a second interval must be interpolated. Clatanoff, col. 1, ln. 26-34. Furthermore, Clatanoff teaches the cited passage teaches that entire lines are missing. Id. Thus, for any pixel on a missing line, the pixels positioned in the same direction as the line relative to the missing pixel are also missing. This teaches away from interpolation in the direction of the line because the pixels with which interpolation would be performed are absent from the original image data. Thus, Clatanoff teaches away from interpolating in both the vertical and horizontal directions.

The Examiner further alleges that the language "eliminate artifacts" disclosed at col. 2, ln. 31 of Clatanoff teaches reducing correlation. FOA, pg. 17. The Applicants respectfully submit that this allegation amounts to a conclusory statement unsupported by articulated reasoning or rational underpinning. The Examiner argues that the claim element is found in Clatanoff by merely copying the claim element and citing a column and line in Clatanoff in parentheses. The rejection does not provide a comprehensive explanation of why the Examiner considers "reducing correlation" as required by claim 1 to be disclosed in Clatanoff. The Applicants find no evidence of

such a teaching in Clatanoff.

The Examiner further alleges that the output of fig. 2, num. 28, labeled "K", is equivalent to the first expanded image data required by claim 1. FOA, pg. 17. Clatanoff teaches that "SVP #1 produces three signals. The first signal is k' at line 26. It is delayed one field and reprocessed to aid in the production of the motion signal k at line 28." Clatanoff, col. 2, ln. 51-53. Thus, it is evident that the value labeled "K" and output by fig. 2, num. 28 is a motion signal. The Applicants respectfully submit that the motion signal, calculated according to the method disclosed in Clatanoff, is clearly not equivalent to expanded image data.

Claim 1 further recites, ". . . calculating a left oblique difference using the target pixel and the first neighboring pixel . . . ." It is noted that in the Office Action, the Examiner assigned the number "b21" to this claim limitation. It is emphasized that the antecedent basis of "the target pixel" is found in "a target pixel" as recited in the limitation numbered "b" by the Examiner.

Claim 1 further recites, ". . . calculating a right oblique difference using the target pixel and the second neighboring pixel . . . ." It is noted that in the Office Action, the Examiner assigned the number "b22" to this claim limitation. It is emphasized that the antecedent basis of "the target pixel" is found in "a target pixel" as recited in the limitation numbered "b" by the Examiner. Thus, it is evident that the target pixel in limitation "b22" is the same target pixel as in limitation "b21".

The Examiner alleges that the directional difference AF shown in fig. 5 of Clatanoff teaches limitation "b21" of claim 1. FOA, pg. 18. The Examiner further alleges that the directional difference CD shown in fig. 5 of Clatanoff teaches limitation "b22" of claim 1. *Id.*

As previously noted, the target pixel used in limitation "b22" of claim 1 must be the same as the target pixel used in limitation "b21". It is evident from fig. 5 of Clatanoff that the directional difference AF is calculated based on the pixels A and F and that the directional difference CD is calculated based on the pixels C and D. However, neither pixel A nor pixel F is used to calculate the directional difference CD. Similarly, neither pixel C nor pixel D is used to calculate the directional difference CD. Therefore, none of the pixels A, C, D and F can be equivalent to the

target pixel because none of these pixels are used to calculate both the directional difference AF and the directional difference CD. It follows that selecting the directional difference AF as the left oblique direction and the directional difference CD as the right oblique direction fails to teach both limitations "b21" and "b22" of claim 1.

For at least these reasons, claim 1 is believed allowable. The Applicants respectfully request reconsideration and allowance of claim 1.

Claim 6

Claim 6 recites, in part, ". . . determining, for said expanded image, whether the contrast in said original image data can be maintained at a predetermined level . . ." Thus, claim 6 requires determining whether the contrast in original image data can be maintained at a predetermined level. In rejecting claim 6, the Examiner alleges that Miyake '963 teaches maintaining the contrast of an image at a predefined level. It is emphasized that this is different than specifying that the contrast in the original image data can be maintained at a predetermined level.

Assuming, *arguendo*, that this is the case, Miyake '963 nonetheless fails to teach determining whether the contrast in original image data can be maintained at a predetermined level.

The passage cited by the Examiner recites:

FIG. 19 shows edge generation in a case where  $a=4$ . Herein, since the transition line  $h(k)$  has an increased contrast, it is necessary to establish limitation for a density value. In FIG. 19, the aforementioned MAX and MIN values are set as the limitation values. The portion indicated by a bold line is the newly generated high resolution data of a pixel-block of interest. Miyake '963, col. 14, ln, 12-18.

The Applicants respectfully submit that the cited passage fails to teach or suggest maintaining contrast at a predetermined value. The "limitation" cited by the Examiner is applied to a density value as opposed to the contrast per se. Furthermore, even if setting the limitations values to the MAX and MIN values causes the contrast to be decreased, it is not evident why doing so inherently causes the contrast to equal a predetermined level.

Claim 10

Claim 10 recites, in part, "vertical and horizontal directional correlation reduction means for reducing correlation of the obtained image in the vertical and horizontal directions" It is noted that in the Office Action, the Examiner assigned the number "c" to this claim limitation.

The Examiner alleges that fig. 10, num. 1040 of Huang teaches a vertical and horizontal directional correlation reduction means. FOA, pg. 11. Fig. 10, num. 1040 of Huang is labeled, "median selector." The Applicants respectfully submit that this allegation amounts to a conclusory statement unsupported by articulated reasoning or rational underpinning. The Examiner argues that the claim element is found in Huang by merely copying the claim element and citing a figure and number in Huang in parentheses. The rejection does not provide an explanation of why the Examiner considers the "vertical and horizontal directional correlation reduction means" required by claim 10 to be disclosed in Huang. See In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336, quoted with approval in KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

The Examiner further alleges that "'stair-step artifacts' in col. 4, line 20 and shown in fig. 8b that are processed to create an 'even diagonal dark edge' in col. 6, lines 5,6" teaches reducing correlation. FOA, pg. 11. However, the Examiner has not explained, and it is not apparent, why processing stair-step artifacts to create an even diagonal dark edge is equivalent to reducing correlation.

Claim 10 further recites, ". . . calculating a left oblique difference using the target pixel and the first neighboring pixel . . . ." It is noted that in the Office Action, the Examiner assigned the number "e1" to this claim limitation. It is emphasized that the antecedent basis of "the target pixel" is found in "a target pixel" as recited in the limitation numbered "d" by the Examiner.

Claim 10 further recites, ". . . calculating a right oblique difference using the target pixel and the second neighboring pixel . . . ." It is noted that in the Office Action, the Examiner assigned the number "e2" to this claim limitation. It is emphasized that the antecedent basis of "the target pixel" is found in "a target pixel" as recited in the limitation numbered "d" by the Examiner. Thus, it is evident that the target pixel in limitation

"e2" is the same target pixel as in limitation "e1".

The Examiner alleges that fig. 10, num. 1030 of Huang teaches both limitations "e1" and "e2" of claim 10. FOA, pg. 12. Fig. 10, num. 1030 of Huang recites the following text:

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Select minimum from
| PixelAboveLeft - PixelBelowRight |
| PixelAbove - PixelBelow |
| PixelAboveRight - PixelBelowLeft |
and use the minimum pair as outputs. Huang, fig. 10, num. 1030.
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As previously noted, the target pixel used in limitation "e2" of claim 10 must be the same as the target pixel used in limitation "e1". Fig. 10, num. 1030 of Huang lists three different calculations. However, no single pixel disclosed is common to two of the calculations. It follows that no pixel disclosed in fig. 10, num. 1030 can be equivalent to the target pixel. Therefore, the Applicants respectfully submit that fig. 10, num. 1030 cannot teach both limitations "e1" and "e2" of claim 10.

For at least these reasons, final rejection of claims 1, 6 and 10 is believed in error.

Dated: November 26, 2007

Respectfully submitted,

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